Design and Construction Notes

1. Unless otherwise specified, the roof shall be designed to carry a combined snow load wind load, plus dead load of 30 psf on the entire roof surface.
   It shall also be designed to withstand a uniform uplift of 16.64 psf under the entire roof. In addition, the roof shall carry additional drifting and or sliding snow loads from adjacent buildings, if applicable.

2. When trusses are used, shop drawings shall be provided to the Design Engineer prior the ordering the trusses and "PE" sealed shop drawings shall be supplied by the Truss Plate Institute certified manufacture at the time of truss delivery.
   (Truss and stringer configuration shown in the drawings is for illustration purposes only.)

3. All nails used for structural connections shall be ring, spiral, or screw shank hardened nails full head size 16d or larger. Structural connections shall include girder/header to post connections, truss to post connections, truss to girder/header connections, knee braces, wye braces, etc.

4. All nails used with pressure treated wood shall be ring, spiral, or screw shank hardened galvanized nails.

5. Nails for general framing can be common, smooth nails. General framing includes purlins, diagonal braces, lateral braces, etc.

6. Bolts, screws, or metal plate connectors may be used instead of nails. Such substitutions shall provide a connection of equal or greater strength and durability, according to the National Forest Products Association's (NFPA) National Design Specification.

7. All wood in contact with the ground or manure shall be pressure treated as per American Wood Preserver's Association Standard (posts shall be treated to 0.6 cca and all other wood shall be treated to 0.4 cca.)

8. Soild or laminated posts shall be Southern Pine No. 2–SR Grade or Douglas Fir–Larch No. 1 Grade (Surface green, used at any condition). All other lumber shall be Southern Yellow Pine or Douglas Fir–Larch No. 2 Grade (Surface dry, used at 19% maximum moisture content). Substitution of other species and grades with equal or greater bending strength (as per NFPA Design Vaues for wood Construction) may be made if approved by the Engineer.

9. If post embedment concrete is taken to the surface, isolate from floor concrete with tar paper and camber for positive drainage. Earth backfill to be placed in compacted 8" lifts.

10. If rear wall is to be below original grade, continue side drain along back wall, but do not have drainfill higher than floor slab.

11. Put 1/2" thick expansion joint material between 6"x 8" posts and floor concrete.

12. Battens, nailers, posts, and tongue and groove siding shall be treated as per American Wood – Preserver's Association standard.

13. All concrete work shall be as per details. Minimum strength shall be 4,000 psi. Reinforcement and placement shall be as per NRCS construction specification 313.

14. If expansion joints in the floor slab are more than 30' apart in either direction or liquid–tight conditions are required, a site specific joint design and details are needed.

15. End trusses shall be faced with 3/4" structural plywood, corrugated 29 gage galvanized steel roofing, an equivalent or bettter. In addition, all other exposed non–treated lumber shall be protected or covered.

16. Knee and Wye bracing are required for the posts and girders as shown. Knee and Wye bracing are required at all posts which extend to the trusses. Wye bracing shall be installed AFTER all roof framing is complete.

17. Permanent continuous lateral bracing is required. Continuous lateral bracing must be installed with staggered side by side overlap connections (no butt to butt connections). The ends of the braces must extend fully past the truss and allow a 2–nail connection without using toenails.

18. Permanent diagonal bracing is required on the truss system. Permanent diagonal bracing is required at each end of the building and at intervals not to exceed 20 feet. All bracing shall be installed as per Truss Plate Institure HIB–98.

19. Roof fasteners shall be a combination of zinc coated steel and neopreme washer. Double stitch the seams of the roof edges. Typical aluminum roof shall have fasteners on a 9" spacing on the purlins 24" on center. Aluminum roofing shall have nominal thickness of 0.018 inches and coated steel of a 29 gauge minimum or better.

20. Designers; the width of the 18" spaced purlins is equal to the width of the snow drift. This width is equal to: 4x [1.08 (cubed root of adjacent building width) – 1.5]. This design accomodates the snow drift from an adjacent building 40' wide.

21. Ventilation shall be provided at the ridge or through the openings in the end trusses. Ventilation shall be provided to offer at least 2" of opening per 10' of building width.

22. Roof gutters with downspouts, or dripline drains shall be installed with a non–erosive positive outlet, and shall meet the requirements of NRCS Conservation Practice Standard 558.

23. All final cut/fill surfaces shall be graded to direct surface water away from the structure.

24. The posts on the backwall do not need to extend to the trusses.

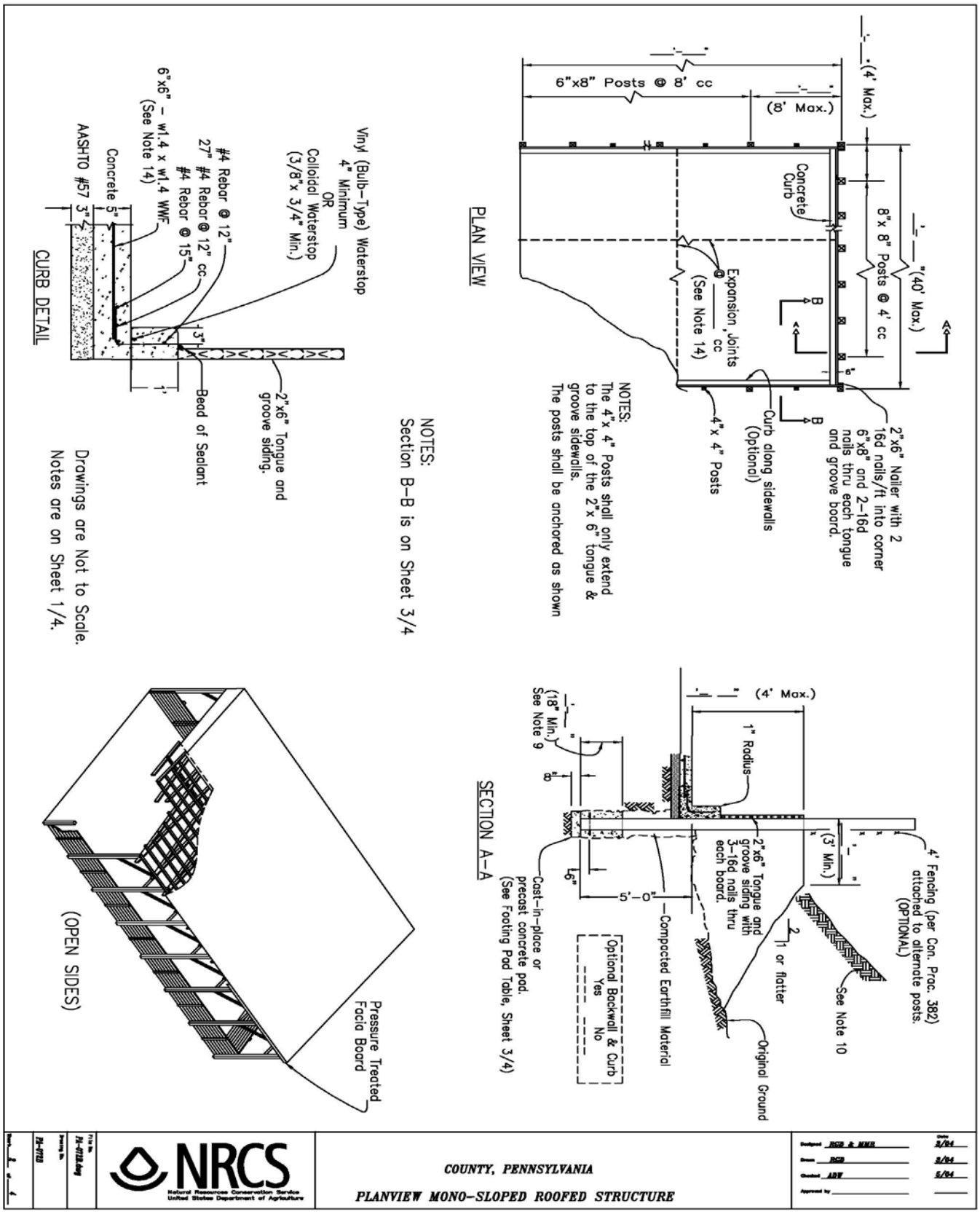
25. Review all other details and specifications. This design is for open sides only. Major building structural changes are necessary if the building sides are covered.

Designed RCD & MMR	Date 3/04
Drawn RCD	3/04
Checked ADW	6/04
Approved by	

DESIGN AND CONSTRUCTION NOTES
MONO–SLOPED ROOFED STRUCTURE

NRCS
Natural Resources Conservation Service
United States Department of Agriculture

File No. PA–072A.dwg
Drawing No. PA–072A
Sheet 1 of 4


PLAN VIEW
(40' Max.)
8"x 8" Posts @ 4' cc
6"x8" Posts @ 8' cc
(4' Max.)
(8' Max.)
Concrete Curb
Expansion Joints @ cc (See Note 14)
2"x6" Nailer with 2 16d nails/ft into corner 6"x8" and 2-16d nails thru each tongue and groove board.
Curb along sidewalls (Optional)
4"x 4" Posts
NOTES:
The 4"x 4" Posts shall only extend to the top of the 2"x 6" tongue & groove sidewalls.
The posts shall be anchored as shown
CURB DETAIL
Vinyl (Bulb-Type) Waterstop 4" Minimum OR Colloidal Waterstop (3/8"x 3/4" Min.)
#4 Rebar @ 12" cc
27" #4 Rebar @ 12" cc
#4 Rebar @ 15"
6"x6" - w1.4 x w1.4 WWF (See Note 14)
Concrete 5"
AASHTO #57 3"
1'
2"x6" Tongue and groove siding.
Bead of Sealant
NOTES:
Section B-B is on Sheet 3/4
Drawings are Not to Scale.
Notes are on Sheet 1/4.
SECTION A-A
(4' Max.)
1" Radius
(18" Min.) See Note 9
8"
6"
5'-0"
Cast-in-place or precast concrete pad. (See Footing Pad Table, Sheet 3/4)
Compacted Earthfill Material
Optional Backwall & Curb
Yes
No
2"x6" Tongue and groove siding with 3-16d nails thru each board.
(3' Min.)
4' Fencing (per Con. Prac. 382) attached to alternate posts. (OPTIONAL)
See Note 10
2
1 or flatter
Original Ground
(OPEN SIDES)
Pressure Treated Facia Board
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PLANVIEW MONO-SLOPED ROOFED STRUCTURE
Designed RCD & MMB 3/04
Drawn RCD 3/04
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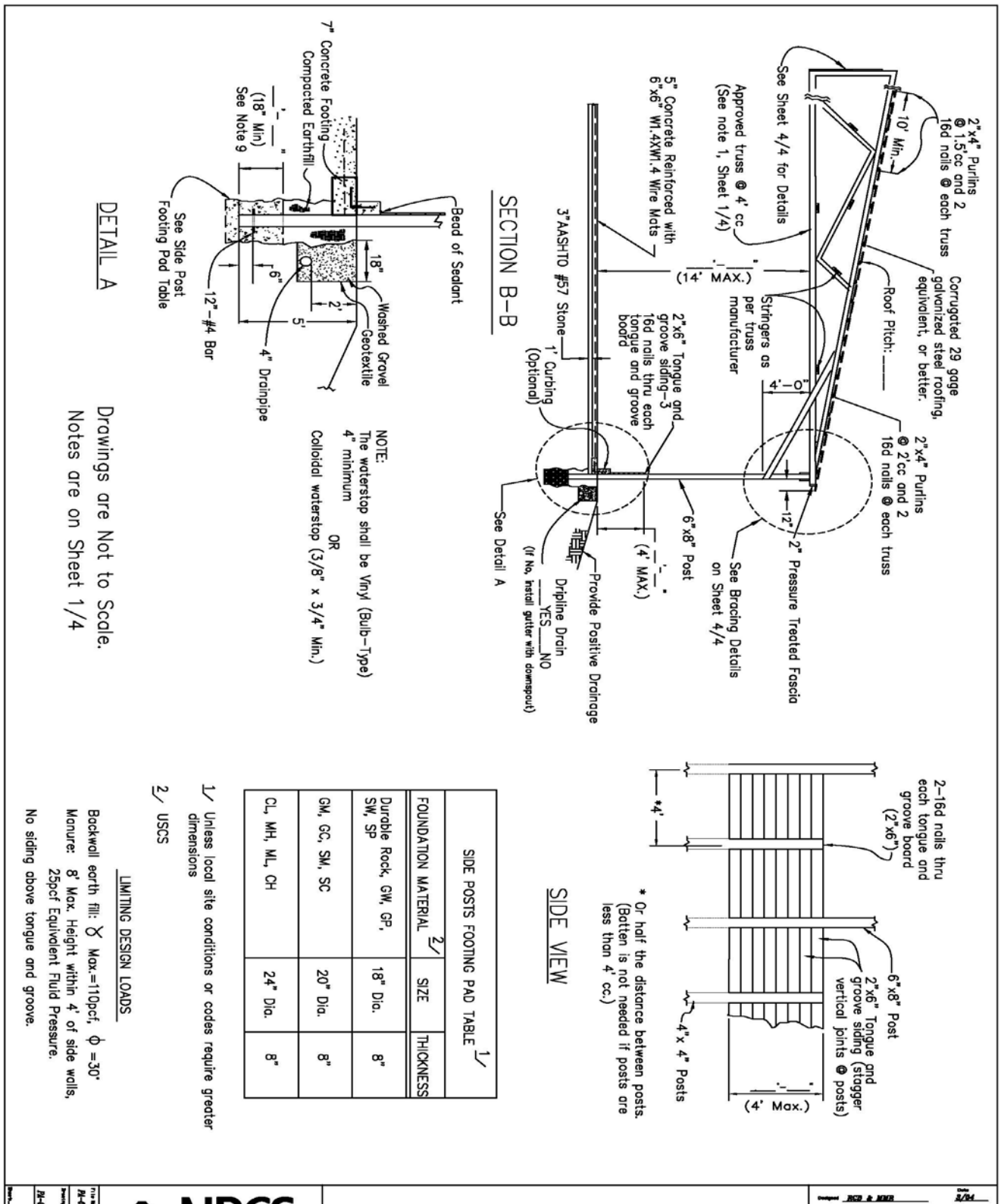
File No. PA-072A.dwg
Drawing No. PA-072A
Sheet 4 of 4



SIDE POSTS FOOTING PAD TABLE 1/		
FOUNDATION MATERIAL 2/	SIZE	THICKNESS
Durable Rock, GW, GP, SW, SP	18" Dia.	8"
GM, GC, SM, SC	20" Dia.	8"
CL, MH, ML, CH	24" Dia.	8"

1/ Unless local site conditions or codes require greater dimensions

2/ USCS

LIMITING DESIGN LOADS

Backwall earth fill: γ Max.=110pcf, ϕ =30°
Manure: 8' Max. Height within 4' of side walls, 25pcf Equivalent Fluid Pressure.
No siding above tongue and groove.

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CROSS SECTIONS MONO-SLOPED ROOFED STRUCTURE

Designed RCD & MMR 5/24
Drawn RCD 5/24
Checked ADV 5/24
Approved by
File Name PA-072C.dwg
Drawing No. PA-072C
Sheet 3 of 4

NAILING DETAIL AT GIRDER & POST CONNECTION
2"x12" (6-16d nails)
3/4" (Through) Bolts
2"x6" Bearing Block
NOTE: OFFSET BOLTS 1/2" FROM CENTERLINE
Ⓒ- 16d GALVANIZED NAILS
NAIL KNEE BRACE TO TOP AND BOTTOM CHORDS OF TRUSS USING Ⓑ- 16d NAILS (CLINCHED) IN EACH CORD.
KNEE BRACE, 2"x 6"
2" x 8"x 16" TRUSS SUPPORT
TRUSS
6 - 16d NAILS
BEARING SUPPORT SEE BRACING DETAILS, NOTE D
3- 16d NAILS(EACH SIDE)
Ⓖ- 16d GALVANIZED NAILS
Ⓕ- 16d GALVANIZED NAILS
NOTE: THE WYE BRACES AND KNEE BRACES SHALL BE INSTALLED AT A 45° ANGLE FROM THE 6"x 8" TREATED POSTS. INSTALL WYE BRACES AFTER THE TRUSSES ARE SET.
6"x 8" PRESSURE PRESERVATIVE TREATED POST
3 - 16d NAILS (Each Side)
2"x 12" GIRDERS
2"x 8"x WYE BRACE
SEE BRACING DETAILS, NOTE A
Aprox. 4'
Ⓐ- 16d GALVANIZED NAILS
2"x 8"x 1' BEARING BLOCKS
BRACING DETAIL
VENTILATION OPENING (SEE SHEET 1/4, NOTE 21)
FACING MATERAL (SEE SHEET 1/4, NOTE 15)
TRUSS
HIGH-CLOSED END OF TRUSS
2"x 12" GIRDERS
6X8 POST
6 - 16d GALVANIZED NAILS
USE Ⓑ- 16d NAILS (CLINCHED) ON EACH CHORD OF TRUSS.
Ⓓ 16d nails
TRUSS
KNEE BRACE 2"x 6"
45°
6"
4'
2 - 16d GALVANIZED THREADED NAILS (TOENAILED)
5 - 16d GALVANIZED NAILS REQUIRED (BEFORE BOLTS)
2"x 6"x 1' BEARING BLOCK
BRACING AT END OF BUILDING
2" x 4" BOTTOM CORD BRACING (2-16d NAILS @ EACH BRACE TRUSS CONNECTION) LAP SPACING BETWEEN BRACES, SHALL BE AS PER TRUSS MFG. RECOMMENDATIONS.
2" x 4" DIAGONAL BRACING AT ENDS OF BUILDING AND AT 25' (Maximum) INTERVALS. (2-16d NAILS @ EACH BRACE TRUSS CONNECTION)
CORD AND DIAGONAL BRACING
Drawings are Not to Scale.
Notes Are on Sheet 1/4
BRACING DETAILS
A. On ends of 2"x12" Girders, use Ⓓ - 16d nails. Where Girders cross treated posts, use Ⓔ - 16d nails.
B. Bracing configuration shall be provided by the Truss manfacturer. The illustration above shows the recommended additional bracing.
C. Do NOT notch posts to accomodate trusses.
D. Provide a truss bearing support between girders at each truss location, as required by the truss MFG. drawings.
NUMBER OF NAILS REQUIRED
BUILDING WIDTH
JOINT
≤ 40'
A 6
B 4
C 6
D* 3
E* 6
F 6
G 3
* NOTE A: ON ENDS OF 2"x 12" GIRDERS, USE Ⓓ - 16d GALVANIZED NAILS. WHERE GIRDERS CROSS POSTS, USE Ⓔ- 16d GALVANIZED NAILS.
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BRACING DETAILS MONO-SLOPED ROOFED STRUCTURE
RCD & NRCS 3/24
RCD 3/24
ADW 5/24
PA-672B.dwg
PA-672B
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